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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,214	04/20/2001	Mitsuru Tanabe	740819-548	9367

22204 7590 06/18/2003

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EXAMINER
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LEE, BENNY T

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES DEPARTMENT OF COMMERCE  
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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
09/838214			

EXAMINER	
ART UNIT	PAPER NUMBER
	10

DATE MAILED:

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

- ☐ This application has been examined ☒ Responsive to communication filed on 31 Mar 2007 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 2 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892.       | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                  |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449             | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474 | 6. <input type="checkbox"/>   |

Part II SUMMARY OF ACTION

1. ☒ Claims 1, 3-7 are pending in the application.  
Of the above, claims 5-7 are withdrawn from consideration.
2. ☒ Claims 2 have been cancelled.
3. ☐ Claims are allowed.
4. ☒ Claims 1 are rejected.
5. ☒ Claims 3, 4 are objected to.
6. ☐ Claims are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. These drawings are ☐ acceptable; ☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☒ The proposed drawing correction, filed 31 Mar 2007, has been ☒ approved, ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections **MUST** be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

PTOL-326 (Rev. 7-82)

EXAMINER'S ACTION

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Claims 5-7 remains withdrawn from further consideration pursuant to 37 C.F.R. 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 5.

The disclosure is objected to because of the following informalities: In the replacement paragraph to page 24, note that "7 to 14C" should be rewritten as --7, 8, 9, 10A-10D, 11A-11D, 12A-12D, 13A-13C, 14A- 14C-- for consistency with the drawing figures. Page 25, lines 5, 12, note that "blocking first" and "blocking third" should be rewritten as --first blocking-- and --third blocking--, respectively. Appropriate correction is required.

The disclosure is objected to because of the following informalities: Note that all of the reference labels appearing in any particular drawing figure should be correspondingly described in the specification's description of that drawing figure. Examples include: Fig. 3A (13, 22); fig. 5C (32, 33); fig 10C, 11B, 11D (211); fig. 11A, in its entirety; etc. Appropriate correction is required.

The use of the trademark Duroid (p 27, l. 10); has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

The drawings are objected to because of the following: In figs. 1, 2B, 2C, 3A, 3B, 4, 5B, 5C, 6A, 6B, 9, 10A, to 10D, 11A to 11D, 12A to 12D, 13A to 13C, 14A to 14C, for the

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cross-sectional views therein, note that proper cross-hatching for all dielectric material should be provided. Applicant's comments have been note. Accordingly, applicant's attention is directed to the table in MPEP 608.02 which depicts cross hatching for various materials. The examiner suggests the cross-hatching depicted in the designation "Section of Synthetic Resin or Plastic" (i.e. alternate thin & thick diagonal lines) as the appropriate cross-hatching for "dielectric" material. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 3, 4, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima in view of either Tozawa or Shigaki (all of record).

Nakajima discloses a transmission line circuit having ground plane (4) with a dielectric layer (2) disposed thereon and a conductive layer (3) disposed on dielectric layer (2). Underlying the ground plane is a semi-insulating substrate (1). Nakajima differs from the claimed invention in that the claimed transmission line configuration (i.e. signal conductor & ground plane sandwiching a dielectric layer) is not disclosed by Nakajima.

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Note that each reference discloses a ground plane layer (3 in Shigaki; 12 in Tozawa) upon which a dielectric layer (1 in Shigaki; Er Eo in Tozawa) is disposed. A signal line (2 in Shigaki; 16 in Tozawa) is disposed on the dielectric layer and includes a narrow lower conductive portion (e.g. 2a in Shigaki) and a wider upper portion (e.g. 2b in Shigaki).

As described above Tozawa and Shigaki respectively disclose the claimed conductor configuration within the context of a transmission line arrangement.

Accordingly, it would have been obvious to have realized the transmission line portion of Nakajima to have the configuration and parameters, as claimed. Namely, as a consequence of such a modification, the dielectric constant of the dielectric layer (e.g. GaAs with a dielectric constant of about 13) is higher than the dielectric constant of the silicon layer (1 with a dielectric constant of about 11.7). Such a modification would have been an obvious substitution of art recognized conductive layers where the specific configuration would have imparted to the Nakajima transmission line the advantageous benefit of improved and impedance characteristic afforded by such a configuration, thereby suggesting the obviousness of such a modification.

Applicant's arguments filed 31 March 2003 have been fully considered but they are not persuasive.

Applicant has argued that the claims, as amended now distinguish over the prior art of record in that none of the prior art teaches or suggests that the dielectric layer has a higher dielectric constant than the underlying substrate.

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Contrary to applicant's assertion, the prior art of record, as combined in the above obviousness rejection, does indeed meet the claims, as amended by applicant. In particular, it should be noted that as a result of the above obviousness combination, the "dielectric layer" being of GaAs (dielectric constant of about 13) has a higher dielectric constant than the silicon "substrate" (dielectric constant of about 11.7), thereby meeting that aspect of applicant's invention.

Claims 3, 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 <sup>F</sup>CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 <sup>F</sup>CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benny Lee whose telephone number is (703) 308 4902.

A handwritten signature in cursive script, appearing to read "Benny Lee".

BENNY T. LEE  
PRIMARY EXAMINER  
ART UNIT 2817

B. Lee

June 13, 2003